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PTO/SB/21 (09-04)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

8

| | |
|------------------------|--|
| Application Number | 10/777,113 (U.S. Patent No. 6,876,944) B2 |
| Filing Date | February 13, 2004 (Issued April 5, 2005) |
| First Named Inventor | MCGAUGHEY, Donald R. et al. |
| Art Unit | 2863 |
| Examiner Name | BHAT, Aditya S. |
| Attorney Docket Number | 57064-A |

ENCLOSURES (Check all that apply)

| | | |
|---|--|---|
| <input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Letter - Request for Certificate of Correction Certificate of Correction (Form PTO/SB/44) |
| <div>Remarks</div> <div>Certificate AUG 26 2005 of Correction</div> | | |

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

| | | | |
|--------------|------------------------|----------|--------|
| Firm Name | Kirby Eades Gale Baker | | |
| Signature | | | |
| Printed name | Shannon L. Beech | | |
| Date | August 19, 2005 | Reg. No. | 53,924 |

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

| | | | |
|-----------------------|--|------|--|
| Signature | | | |
| Typed or printed name | | Date | |

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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AUG 26 2005



PTO/SB/17 (12-04v2)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).**FEE TRANSMITTAL**
For FY 2005☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 100.00

Complete if Known

| | |
|----------------------|-----------------------------|
| Application Number | 10/777,113 |
| Filing Date | February 13, 2004 |
| First Named Inventor | MCGAUGHEY, Donald R. et al. |
| Examiner Name | BHAT, Aditya S. |
| Art Unit | 2863 |
| Attorney Docket No. | 57064-A |

METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☐ Deposit Account Deposit Account Number: _____ Deposit Account Name: _____

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

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WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

| Application Type | FILING FEES | | SEARCH FEES | | EXAMINATION FEES | | Fees Paid (\$) |
|------------------|-------------|-----------------------|-------------|-----------------------|------------------|-----------------------|----------------|
| | Fee (\$) | Small Entity Fee (\$) | Fee (\$) | Small Entity Fee (\$) | Fee (\$) | Small Entity Fee (\$) | |
| Utility | 300 | 150 | 500 | 250 | 200 | 100 | |
| Design | 200 | 100 | 100 | 50 | 130 | 65 | |
| Plant | 200 | 100 | 300 | 150 | 160 | 80 | |
| Reissue | 300 | 150 | 500 | 250 | 600 | 300 | |
| Provisional | 200 | 100 | 0 | 0 | 0 | 0 | |

2. EXCESS CLAIM FEES

| Fee Description | Fee (\$) | Small Entity Fee (\$) |
|--|----------|-----------------------|
| Each claim over 20 (including Reissues) | 50 | 25 |
| Each independent claim over 3 (including Reissues) | 200 | 100 |
| Multiple dependent claims | 360 | 180 |

Total Claims **Extra Claims** **Fee (\$)** **Fee Paid (\$)**

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims **Extra Claims** **Fee (\$)** **Fee Paid (\$)**

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

| Total Sheets | Extra Sheets | Number of each additional 50 or fraction thereof | Fee (\$) | Fee Paid (\$) |
|--------------|--------------|--|----------|---------------|
| - 100 = | / 50 = | (round up to a whole number) x | | |

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Certificate of Correction

Fees Paid (\$)

\$100.00

SUBMITTED BY

| | | | | | |
|-------------------|-------------------------|-----------------------------------|-----------------|-----------|----------------|
| Signature | <i>Shannon L. Beech</i> | Registration No. (Attorney/Agent) | 53,924 | Telephone | (613) 237-6900 |
| Name (Print/Type) | Shannon L. Beech | Date | August 19, 2005 | | |

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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AUG 26 2005



IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Applicant : MCGAUGHEY, Donald R. et al.
Patent No. : 6,876,944 *B2*
Issued : April 5, 2005
Serial No. : 10/777,113
Filed : February 13, 2004
Title : MOTOR SPEED ESTIMATION FOR STABILIZED
MOTOR CONTROL
Art Unit : 2863
Examiner : BHAT, Aditya S.

KIRBY EADES GALE BAKER
Box 3432, Station D
Ottawa, Ontario
CANADA K1P 6N9

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
United States of America

Dear Sir:

REQUEST FOR CERTIFICATE OF CORRECTION

The above identified patent issued on April 5, 2005. Upon receiving and reviewing the Letters Patent document, the following errors were noticed:

- Column 2, line 66: ' one f the ' should read ' **one of the** '
- Column 4, line 66: ' DF 1118 ' should read ' **CDF 118** '
- Column 7, line 3: ' known that that the ' should read ' **known that the** '
- Column 14, line 46: ' product).' ' should read ' **product).** '

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(AUG 26 2005)



Claims 38-42 should read as follows:

38. A system for estimating a motor speed comprising:
- a correlation mechanism for determining a correlation between a current wave sensed at the motor and frequency pairs from a set of weighted frequency pairs representing the current wave;
 - a fitting mechanism for fitting components of a motor control signal to a corresponding number of first orthogonal pairs in a set of weighted orthogonal pairs, the orthogonal pairs being orthogonal to the frequency pairs;
 - a region determination mechanism for comparing a subharmonic from the current wave with a harmonics speed model to identify two regions in which to locate a corresponding harmonic, the subharmonic having a frequency less than a motor control signal;
 - a corresponding frequencies mechanism for identifying a harmonics pair of frequencies in the two regions having a separation from each other no greater than a smallest harmonic of the motor control signal, wherein **one of the** frequencies in the harmonics pair is the corresponding harmonic;
 - a speed estimation mechanism for comparing desired frequencies from the identified harmonics pairs with a harmonics speed model to determine an estimation of the speed; and
 - a controller in communication with the correlation mechanism, the fitting mechanism, the mse reduction mechanism and the speed estimation mechanism for coordinating the process of estimating the motor speed.
39. The system according to claim 38 wherein the fitting mechanism comprises:
- an orthogonal weights mechanism for determining the orthogonal weight for an orthogonal pair from the set of weighted orthogonal pairs based on the value of one of the frequency pairs; and
 - a frequency weights mechanism for determining the frequency weight for a frequency pair from the set of weighted frequency pairs based on the corresponding orthogonal weight.

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U.S. Patent and Trademark Office
Application Serial No. 10/777,113
August 19, 2005



40. The system according to claim 38 further comprising:
a CDF analysis mechanism for determining if a previous motor speed is classified as low and providing a supplement frequency component of the motor control signal to the fitting mechanism to be fit as a second pair of the orthogonal pairs if the previous motor speed is classified as low.
41. The system according to claim 38 further comprising:
a subharmonics mechanism for searching the current wave for subharmonics between 0Hz and the frequency of the motor control signal.
42. The system according to claim 38 further comprising:
a harmonics identification mechanism for locating harmonics in the regions.

Claims 38 to 42 were renumbered when the allowed application was prepared for publication as Patent No. 6,876,944. Neither the Applicant nor the owner was consulted regarding this. We request that the original claim numbering and order be restored and that a correction in the claim dependency of claim 42 (changed to claim 38 by the above publication preparations) be made.

Accompanying this request is form PTO/SB/44 which clearly shows the errors and necessary amendments and the required \$100.00 fee (credit card payment - Form PTO-2038).

Respectfully submitted,

Shannon L. Beech
Reg. No. 53,924
Tel. (613) 237-6900
Email@kirbyeades.com
Our File No. 57064-A
August 19, 2005

AUG 26 2005

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 2

PATENT NO. : 6,876,944 B2
APPLICATION NO.: 10/777,113
ISSUE DATE : April 5, 2005
INVENTOR(S) : MCGAUGHEY, Donald R. et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2, line 66: ' one f the ' should read ' one of the '
Column 4, line 66: ' DF 1118 ' should read ' CDF 118 '
Column 7, line 3: ' known that that the ' should read ' known that the '
Column 14, line 46: ' product).' ' should read ' product).' '

Claims 38-42 should read as follows:

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a region determination mechanism for comparing a subharmonic from the current wave with a harmonics speed model to identify two regions in which to locate a corresponding harmonic, the subharmonic having a frequency less than a motor control signal;

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a speed estimation mechanism for comparing desired frequencies from the identified harmonics pairs with a harmonics speed model to determine an estimation of the speed; and

a controller in communication with the correlation mechanism, the fitting mechanism, the mse reduction mechanism and the speed estimation mechanism for coordinating the process of estimating the motor speed.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

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P.O. Box 3432, Station D
Ottawa, Ontario K1P 6N9 CANADA

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